PHILADELPHIA, MARCH 30, 1878.

ORIGINAL LECTURES.

CLINICAL LECTURE

ON FRACTURES OF THE HUMERUS AND COLLES' FRACTURE.

Delivered at the Bellevue Hospital, N.Y.,

BY FRANK H. HAMILTON, M.D.

Reported by P. BRYNBERG PORTER, M.D.

GENTLEMEN,—Fractures of the shaft of the humerus are sufficiently common to demand your careful consideration, and especially do they deserve attention from the fact that non-union occurs more frequently after this fracture than after any other. Next in frequency, in this respect, comes fracture of the femur. The humerus has, as you will readily see, if you reflect a moment, quite a strong resemblance to the femur in its position and relations. Like it, it is the upper bone, and stands alone, having no bone, like the radius or fibula, parallel with it. In two respects, however, fracture of the femur is quite different from fracture of the humerus. In the first place, as the femur is employed so much in walking, it is of the utmost importance that there should be as little shortening as possible, and our most earnest endeavors are made to accomplish this; while in fractures of the humerus it makes very little difference whether there is shortening or not, as the patient will be hardly likely to notice it at all. As a matter of fact, I found, in the very extensive observations I made in gathering statistics, that shortening is almost as uniform in fractures of the humerus as in those of the femur. Yet it causes no deformity, and so passes by unnoticed. Secondly, the muscles attached to the femur are immensely more powerful than those of the humerus. As I have said, it is not of much importance to avoid shortening in fractures of the latter, and I am not quite certain but that the shortening makes a better and firmer limb. Still, surgeons have tried all sorts of ingenious devices for the purpose of overcoming shortening. Lonsdale's splint was among the first of these, but it proved of no real service whatever in this respect. It was very properly condemned by Malgaigne, and soon became discarded. Since then a great variety of others have been devised, and among them one by my friend Dr. Martin, of Boston; but, notwithstanding my friendship for him, as a surgeon I cannot but pronounce it perfectly useless, as all the rest have proved. Dr. Martin's splint, which I now show you, consists of a firm metallic rod, which can be lengthened and shortened at pleasure, with a leather cap attached to its upper extremity, which fits over the shoulder, and another at its lower extremity, which covers the elbow. I have never attempted to use it, for the simple reason that I am quite positive that it would fail, because no sufficient purchase can be obtained by it for extension and counter-extension. In a late case of compound fracture of the humerus at this hospital, Dr. Stephen Smith succeeded in making extension and counter-extension by keeping the patient in bed and using traction upon the arm extended at a right angle; but it is not desirable, as a rule, to confine patients to bed for a broken arm. In Dr. Smith's case the fractured limb after the treatment was actually an inch longer than the uninjured one, a result which I think must be attributed to the gradual opening of the joint. Dr. Clark, of St. Louis, is in the habit of making extension by means of a weight, and, though this method must be found very uncomfortable and inconvenient to the patient, it is probably effective as long as the latter is in a standing or sitting posture, but impracticable when he is lying down. All methods hitherto devised, therefore, are very imperfect, and surgeons, as a rule, have come to the conclusion that there is no use in trying to prevent a certain amount of shortening; so we have abandoned them all, and content ourselves with simply pulling out the fragments of bone into position, applying the side-splints, and *keeping the arm quiet.* This last point is a very important one, and I lay great stress upon it. The fact that in so many cases the fractured bone is not kept at rest accounts for the want of union which is, unfortunately, so frequent a result. This may, perhaps, seem somewhat contradictory to what I have already said; but motion upon a pivot, as in the case of the clavicle, for instance, does not interfere with union, while a to-and-fro motion of the fragments is certain to prevent it. As a rule, you will find that in fractures of

the humerus patients are constantly moving the forearm with the other hand, and this is almost certain to produce motion of the lower fragment upon the upper. This could be avoided if the arm could be left in a straight position; but that would be undesirable, and we have other means at our command for accomplishing the same result. During all my long years of practice I have never seen a case of fractured humerus (or, indeed, any other fracture whatever) fail to unite while under my own treatment.

And now let me explain to you the simple apparatus which I use, and the method of applying it. The essential feature of it is an outside splint, which fits on the top of the shoulder, resting against the head of the humerus, and extending down to just above the elbow. This may be made of felt, leather, or gutta-percha; but the first of these materials is the best and cheapest, and the one I usually employ. It should always be covered with cotton cloth, so that the bandages may be stitched fast to it. In applying the splint, do not let it overlap the condyles, and great care should be taken to prevent its slipping down. I regret to say that I have but a single case of fracture of the humerus in my wards at present, while I had no less than ten of fracture of the femur when I lectured on that subject; this, not because the latter is so much more frequent an accident than the former (for the one is just as common as the other), but, under ordinary circumstances, patients do not come into the hospital for fracture of the arm, while the reverse is true of fracture of the thigh.

In the first case which I show you, the dressing was applied without my knowledge, and, you will notice, in addition to the splint to the humerus which I have been describing another has been used for the forearm. In my own treatment I omit this, because, first, it is useless, and, second, it is apt to interfere with the circulation. It will usually be found to fit too tightly if the elbow-joint is closed, and too loosely if it is open, and it frequently causes swelling of the arm. This very rarely occurs when the forearm splint is not used, and if it should result it can be easily overcome by putting the patient to bed for a little while. For the second case which I present to you, a young lad, I am indebted to Dr. Smith; but, as the fracture here is through the condyle, it involves a somewhat different treatment, which I cannot pause to detail now.

In fractures of the shaft of the humerus I always omit the angular splint at the elbow, as well as the forearm splint, because I desire that motion in the joint should be unrestrained. The elbow-splint produces a certain amount of anchylosis, which I am desirous above all things to avoid, because I am afraid that non-union will result in consequence. The moment that any stiffness occurs in the joint, the lower fragment begins to move upon the upper one; and that, as I have endeavored to impress upon you, is fatal to union.

Having no patient with fracture of the humerus upon whom to show you the application of the dressing which I approve, I will demonstrate it upon the healthy subject. The arm is held quite near the chest, and using, as you see, such a long felt splint as I have described, it is held in position by successive turns of the roller-bandage from top to bottom, and then reversed, and these should be made as snugly as possible. I am also in the habit of using a short padded splint, such as I show you, on the inside of the arm, not for any effect upon the fracture, but simply to avoid the pressure of the bandage in the axilla. The two splints are held in position by the same roller, and one element of success, as I mentioned, is to keep the arm quite snug to the chest while putting on the dressing. Some surgeons make a practice of carrying turns of the bandage around the opposite shoulder and axilla; but, though it may look very pretty, it is an utterly useless procedure, and may cause serious trouble by compressing the axillary vessels. I do not even cover up the top of the outside splint with the bandage. Having now applied the roller in the manner described, I myself stitch it securely to both splints, in order to keep it from slipping. The dressing is then finally completed by passing two or three turns of a bandage around the arm and chest, thus keeping the fractured humerus firmly in apposition to the latter, and by suspending the forearm in a sling. The bandage passing around the chest is for the purpose of keeping the arm quiet, an indication upon which I have dwelt with so much emphasis, and when it is employed you can allow just as much motion in the elbow-joint as you please, for it will not

disturb the fragments. You may practise for a number of years without seeing a case of non-union of fractured humerus; but you will find it a very serious accident if you should be unfortunate enough to meet with one, and hence the great desirableness of avoiding it if possible. I have recently had under treatment a case in which the bone had remained ununited for a year, and it was necessary to keep a gimlet in the fragments for six weeks; but a large abscess was thereby originated, and the patient endured a vast amount of suffering.

COLLES' FRACTURE.

I understand that one or two of my colleagues have recently been bringing this subject before the class; but if there is any difference between my own and their views in regard to it, you will at all events have the advantage of deciding for yourselves which opinions seem to be the most reliable.

True Colles' fracture, in which the radius is broken an inch and a half above the joint, is exceedingly rare; but the typical and classical fracture of the lower end of the radius, which goes by his name (but is in reality situated within half an inch of the joint), is sufficiently common. Mr. Colles really never saw in the cadaver the fracture which he described; but, always meeting it during life, he supposed it to be situated an inch or an inch and a half higher up than it really was. I may say that I greatly deprecate the practice of calling fractures or diseases after gentlemen's names, for it is very apt to be the case that in the course of a few years the affection so named is found to be in reality a very different one from that originally described. The English are especially given to this custom, and as examples I may mention Pott's disease of the spine and fracture of the fibula, Bright's disease, and Addison's disease.

I propose now to mention briefly a few of the varieties of fracture of the lower end of the radius. And, first, we have the typical one, which is usually caused by a fall upon the hands at the back-door in winter, and is hence frequently called the "back-door fracture." From the shape of the deformity it is also known as the "silver-fork fracture," and that is the *Fifth Avenue* name for it. When this fracture occurs, the individual usually falls only his own length, and it is far more common in winter, when there is ice on the ground, than at any other season. If it were a month later in the season, I could to-day probably show you twenty, instead of only three, examples of it. The appearance of the hand after a fracture of this character is such as I show you here upon the model, and you will observe that there is a swelling upon the back of the wrist, and that the hand falls a little forward, as well as a little towards the radial side. If we could examine the bones, we should find that there was a fracture within one-half or three-fourths of an inch of the lower end of the radius, the lower fragment being simply tilted backward and thus giving rise to the swelling mentioned. The fracture is transverse, and I am sorry that I have not a bony specimen of it to show you; but the one that I expected to bring here to-day has become mislaid. In nine cases out of ten this is the character of the fracture, and you have simply to replace the fragment, which is most conveniently done by forcibly flexing the wrist across your knee. I met with this accident in my own person, a few years ago, while on shipboard, and, the fracture having been reduced in the manner described, there was no difficulty in effecting a cure by the simple application of a gutta-percha splint to the palmar surface.

But, unfortunately, there is, secondly, in addition to the fracture we have been considering, a giving way of the radio-ulnar ligament in a certain proportion of cases. Even if it does not yield altogether, it is at least put upon the stretch, giving rise often to considerable pain and soreness. Ligaments, when once disrupted, can never be made to unite as they were before, and hence, when this accident occurs, there is always more or less deformity remaining. The treatment is the same whether the ligament has given way or not; and when this takes place, it is always just so much the worse for the patient.

Thirdly, we may have also a fracture of the lower end and styloid process of the ulna, a condition which I do not very well know how to remedy; and,

Fourthly, we may have another more serious complication, viz., a comminution of the lower fragment, which, instead of being simply tilted backwards, is found to be broken into three or four pieces. A "back-door" fracture is never of this

character, for it requires a greater force to produce it than is brought into play in falling one's length. The specimen which I here show you is one which was presented to me by Prof. Wm. H. Van Buren, and was taken from a patient who died in the New York Hospital in consequence of the injuries giving rise to the fracture. The lower fragment, as you will observe, has been broken into four pieces, and there was probably some impaction at the time the accident occurred. This is, of course, a much more serious matter, but it is not the typical fracture upon which I am chiefly speaking to-day.

Fifthly, there is the fracture which Dr. J. Rhea Barton, of Philadelphia, described, but about which I must confess I am somewhat skeptical, viz., of the posterior tip of the lower end of the radius. I have never met with a single case of it, and have never been able to find the specimens of one in any museum. Lenoir and Nélaton each say they have seen one case of it; but whether the two cases were really the same one I do not know. Several years ago quite a number of cases were reported in the Philadelphia journals, but they were, undoubtedly, all Colles' fractures. If there is such a fracture, it must, at all events, be exceedingly rare, so that you will hardly be likely to meet with it in practice.

We come now to the subject of the treatment of these fractures of the lower end of the radius. It will be found that the hand is usually thrown towards the radial side (for the detailed explanation of which circumstance I must refer you to my work on fractures and dislocations), and this is the reason why so many pistol-shaped splints have always been used in these fractures. I now exhibit to you quite a number of them, which have been devised by different surgeons, and the object of all of them is to throw the hand in the opposite direction. Now, what effect has such a splint in producing the desired result? None whatever. In order really to have any effect in counteracting this tendency to adduction, the traction must be made forcibly. The easy position afforded by the pistol-splints which I show you causes the hand to move only in the wrist-joint, in which there is naturally very free lateral motion allowed. The only splint ever known by which sufficient adducting power to be of any practical service was obtained was that devised by Nélaton; but no human being could possibly stand the pain occasioned by the stretching of the injured ligaments which would necessarily happen. You will presently see that I use the pistol-splint myself, but not for the purpose just mentioned. There is, indeed, no indication to fulfil by throwing the hand towards the ulnar side; the only real indications in the treatment being to restore the fragment to its own place and maintain it in position. When the fracture is once reduced, it remains so permanently with the greatest ease, for the least pressure in the opposite direction prevents the fragment from slipping back again. This fracture, however, which, as I said, is almost always transverse, is not quite so easy to reduce as it is to maintain the parts in position when the reduction has been made, and this is due to the denticular character of the surfaces where the bone has been broken off. A good reduction at first I regard as the most essential point of the treatment, and I lay special stress upon it, because I have seen so much injury to the joint under consideration result from tight bandaging, which is altogether unnecessary, and seems to be resorted to by some under the idea that great force is required to keep the lower fragment in position. If you ever get a good result in this fracture, it will be because you have reduced it well at first. Be very careful, then, to get the lower fragment into line before applying any bandage whatever, and "if at first you don't succeed, try, try again." I ought to remark here that in not one case out of five do I succeed in getting crepitus in reducing it, because the fragments glide over each other so smoothly. Having reduced it well, which, as I again remark, is a matter of the utmost importance, I care very little what appareil you make use of to retain the parts in position. There are a variety of appliances, by all of which you can get excellent results; but I must say that I like my own the best.

I am in the habit of employing the pistol-splint because it affords a better view of the seat of fracture, and thus enables me to see whether the fragments are in line. It is, of course, applied to the palmar surface, and this is sometimes the only splint I use, though ordinarily I prefer a back-splint also. When I am going to treat a Colles' fracture, I take a piece of common shingle and cut it to the shape

best adapted to the particular case, always taking care to hollow out a space into which the ball of the thumb may fit, and to cut it off at such a length as to reach only to the metacarpo-phalangeal articulation, so as not to interfere in the least with the free motion of the fingers. There is no reason whatever why the motion of the fingers and thumb should be interfered with, and by leaving them free you prevent any stiffness or tendency to anchylosis, as well as greatly enhance the comfort of the patient. The splint should reach as high up as the elbow, and should be carefully padded, especially in the portion covering the palm of the hand, in such a manner as to adapt itself well to the parts with which it comes in contact, except at the seat of fracture. It is a point of the utmost importance that there should be no padding between the lower fragment and the splint, but that here the space should be so open that there can be no possibility of any pressure upon the median nerve and the radial and ulnar arteries. Pressure upon the nerve always causes excessive pain, and there are eighteen or twenty cases on record in which sloughing of the hand has been reported from interference with its nerve and vascular supply. The bandage should never be put on tightly enough to do any mischief whatever, and the arm should be just as comfortable after the dressing is applied, as if lying on a pillow. To sum up, then, the treatment consists of, *first*, a complete reduction of the fracture at first, and, *second*, the retention of the parts in position by means of an appareil which shall be perfectly comfortable to the patient, and in which there can be no danger of pressure upon the nerve and arteries. The same treatment is equally applicable to all the complications of which I have spoken; though, fortunately for the surgeon, the injuries which are sufficient to produce the comminuted form of fracture almost always result fatally.

I have hitherto omitted to speak of the researches of Dr. Moore, of Rochester, a very candid surgeon, upon this subject. In two autopsies which he made he discovered that, in addition to the fracture and displacement of the radius, the tendon of the extensor carpi ulnaris muscle had been dislodged from its groove, and he was hence led to believe that this was not an infrequent occurrence. I cannot but regard these, however, as very rare and exceptional cases, and I doubt very much if the tendon could be maintained in position, after having once slipped from its groove, by the treatment which I have described.

In all of these wrist-joint fractures it is important to give motion early; and fortunately, in the ordinary cases, we can do this at about the end of a week.

The first case that I show you is that of a young girl who received the injury by falling from a sofa, and you will observe that the dressing which the house-surgeon has placed upon her arm is not exactly such as I have described. It is not quite so convenient or so comfortable to the patient, and I should think there would be a little more danger of compression of the nerve and arteries with it; but still I do not doubt that a most excellent result will be obtained.

The second patient is an adult man, and, as no dressing has as yet been applied in this case, I will demonstrate upon him the method of applying my appareil. I first bring the arm to a right angle, and then put the two splints in position. You will observe that the palmar splint is sufficiently long to reach from the elbow to the metacarpo-phalangeal articulation, and that there is no padding within an inch of the lower fragment when it is adjusted, while, on the other hand, the dorsal splint (which is really not essential to the treatment) is short, and is especially well padded on the seat of fracture. In putting on the roller-bandage, I make its turns only tight enough to hold the splints snugly in place, and by no means so tight as to occasion any possible injury, taking care to leave the thumb free. I do not like strips of adhesive plaster for holding the splints in position, because they are always apt to be either too tight or too loose. Now the arm is put in a sling, and our patient is made perfectly comfortable.

A NEW SOURCE OF ATROPINE.—A new source of atropine has been noted by Dr. J. Tweedy, of the Royal London Ophthalmic Hospital. The alkaloid was derived from an Australian plant—the *Duboisia myporoides*—of a tribe midway between the *Solanaceæ* and the *Scrofulariaceæ*, and the physiological properties were investigated by Dr. Sydney Ringer. The alkaloid would seem to be in all respects identical with atropine.—*Med. Press and Circular.*

ORIGINAL COMMUNICATIONS.

PAPER LINT.

BY W. W. KEEN, M.D.,

One of the Surgeons to St. Mary's Hospital, Philadelphia.

SOME time since, Messrs. Wyeth & Bro. sent me a sample of paper lint, which, after considerable trial, I have found so excellent that I desire to call the attention of the profession anew to this admirable substitute for ordinary patent lint.

The article in question comes in sheets, about twelve by eighteen inches, and about as thick as patent lint, and consists of pure paper felt. In order to test the relative absorbent powers of the paper and the patent lint, I made a number of comparative experiments, of which the following may serve as a sample. A piece of patent lint weighing one hundred and thirty-three grains, and measuring five and one-half by nine inches, was suspended over a basin of water so that one inch of it hung in the water and eight inches out of it. In eighteen minutes it was completely wet, and weighed six hundred grains, a gain of four hundred and sixty-seven grains, or three and one-half times its own weight. A piece of patent lint of the same weight, but measuring nine by nine inches, was similarly suspended, and after five hours it weighed only three hundred and sixty grains, a gain of two hundred and twenty-seven grains, or one and three-fourths times its own weight; only the part in the water was really wet, and for about two and one-half inches farther up it was damp, the remaining five and one-half inches being dry.

As to cost, the paper lint is vastly cheaper. If regard be had only to weight, a roll of patent lint weighs about twelve and three-fourths ounces, and costs one dollar and sixty cents, or about twelve and one-half cents an ounce. A pound of paper lint, sixteen ounces, costs fifty cents, or about three cents an ounce. In regard to surface-cost (and in practice this is the one to be chiefly considered) a similar disproportion exists. A roll of patent lint measures five yards by fifteen and one-fourth inches, or as nearly as may be nineteen square feet, at one dollar and sixty cents, which is eight and one-half cents per square foot. Paper lint varies somewhat in the number of sheets to the pound, but eleven sheets (twelve by eighteen inches) are about an average, which would give sixteen and one-half square feet, at a cost of fifty cents, or about three cents per square foot. In other words, patent lint is over four times as costly per ounce, and nearly three times as costly per square foot.

Put to test of practical experience in my wards at St. Mary's Hospital, it has given great satisfaction, and is immensely superior in most respects to the patent lint. As an absorbent it is so far superior that there is no comparison between the two. As a means of applying moist dressings, such as lead water and laudanum, warm or cold water, and other solutions, it answers as well as ordinary lint except in one particular,—it tears too easily. To remedy this I have suggested to Messrs. Wyeth that a sufficient number of cotton or linen threads be added to the pulp to give it greater tenacity, and when this is done it will be better than the ordinary lint. For salves and other dry dressings on even or moderately uneven surfaces, it answers admirably, but on very uneven surfaces, as the ends of some stumps, it is not so pliable as patent lint and does not so readily adapt itself to the inequalities of the surface. I have also used it for belladonna plasters, etc., with good success. If, however, the plaster is so stiff as to require considerable rubbing, it is apt to scale off in layers, a defect which I suspect the linen or cotton threads above alluded to may very probably remedy.

Once that the proper tenacity, softness, and thickness are attained, it is easy to see to what excellent uses it may be applied. It can be impregnated with carbolic acid, salicylic acid, chloral, or other antiseptics, and used dry or wet; with astringents and hæmostatics; and coated with rubber on one surface will answer admirably for light poultices. I have so used it, covered with waxed paper, with excellent results. This waxed paper, I may say in passing, I introduced into St. Mary's Hospital some years ago, and it has almost entirely replaced the more expensive and scarcely more useful oiled silk. It is prepared in the hospital from French tissue-paper in sheets, and is of excellent quality and very cheap.

Since using the samples of paper sent me by Messrs. Wyeth, I have tried a similar article made by John Huffnagle, of

New Hope, Bucks county, Pennsylvania, and have obtained about equally satisfactory results both as to absorbent power and cheapness. This is already prepared for poultices and other wet dressings where evaporation is to be prevented.

I have also lately tried some patent lint and canton flannel, made absorbent or hygroscopic, by Hance Bros. & White. While far better than similar ordinary articles, neither was equal to the paper lint. The paper lint either absorbed more quickly, or, what is far more important, absorbed much more in proportion to its own weight, as the following experiment shows. A piece of paper lint, five and one-half inches square, weighing fifty-two grains, suspended partly in water as before, was wholly wet in seven and one-half minutes, and weighed three hundred and eight grains, a gain of two hundred and fifty-six grains, or five times its own weight. A similar-sized piece of hygroscopic patent lint weighed thirty-three grains, was wetted in twenty minutes, and weighed two hundred and one grains, a gain of one hundred and sixty-eight grains, or five times its own weight. A similar-sized piece of hygroscopic canton flannel weighed ninety-two grains, was wetted in twenty-one minutes, and weighed two hundred and ninety-nine grains, a gain of two hundred and seven grains, or two and one-fourth times its own weight. The cost of the hygroscopic patent lint is, I presume, somewhat more than that of the ordinary article.

A CASE OF STRANGULATED HERNIA.

BY A. P. FRICK,

A. A. Surgeon, U.S.A.

ON January 13, 1878, while in camp near Spearfish (Black Hills), D. T., with the recent expedition under command of Major A. W. Evans, 3d Cavalry, I was called in consultation to a case of strangulated hernia.

The previous history, as given me by Dr. Louthar, of Spearfish, the attending physician, is as follows, viz.:

J. S., age about 45, had an oblique inguinal hernia on the right side of some years' standing. Strangulation first took place January 5, in consequence of violent bodily exertion; reduced by taxis January 8, but gut became strangulated again in the evening of the same day, and now resisted all efforts at reduction, while the most alarming symptoms incident to this condition set in.

At 11 A.M. on January 13, the fifth day of continued strangulation, I found the condition of the patient anything but encouraging. Semi-conscious, prostrated to the verge of collapse, pulse almost imperceptible, there seemed to be great risk that the patient would die under the knife; but, as the only chance for life, it was decided that I should operate.

An anæsthetic (two parts chloroform and three ether) was administered, and herniotomy performed by linear incision. Length of incision, about three inches; coverings carefully divided, layer after layer, on a grooved director, until the hernial sac was reached, which, being opened with the usual precautions, discharged a dark, turbid serum intermingled with small coagula. The intestine appeared quite dark, almost black; there was, however, no escape of gas, neither could any special change of consistence be detected. With but little hesitation I made my decision, —cautiously divided the stricture from within, returned the bowel, and closed the wound.

The after-treatment, very judiciously carried out by Dr. Louthar, consisted chiefly in keeping the patient at rest and in administering tonics, stimulants, and beef-essence.

January 14.—Pulse extremely low; surface cold; passes very offensive flatus; carbolic acid to be used freely, locally and about the room; chlorate of potassium internally; ice by the mouth to allay thirst; tonics, stimulants, and beef-essence continued.

January 15.—Flatulence continues; pulse a little stronger; same treatment.

January 16.—Pulse much improved; no further flatulence; patient has a little appetite, and, for the first time, a passage from the bowels; no change in treatment.

From the 16th to the 19th the improvement was steady and substantial. On the last-named date the command started for Fort Laramie; this was the seventh day after the operation, and, when last seen by me, the patient was apparently out of danger. Although I have been unable to hear of the case since, I have no doubt it resulted in complete recovery.

In this case a vigorous constitution, and the excellent state of health of the patient at the time strangulation took place, have contributed largely to the unexpectedly favorable result.

From the table of Mr. Gay, as given in works on surgery, showing the result in one hundred and eighteen cases operated on after different periods of strangulation, it appears that of four, delayed to the fifth day, there was no recovery.

FORT LARAMIE, WYOMING TERRITORY.

THE PHYSIOLOGICAL ACTION OF THE BROMIDE OF AMMONIUM.*

BY LOUIS BRECHEMIN, JR., M.D.,
Philadelphia.

GIVEN hypodermically to frogs, in doses of from one to five grains, bromide of ammonium causes at first a period of quietude and lessened irritability, then muscular relaxation, in which the animal submits to pinching, burning, or other irritation without giving any signs of recognition, reflex action and sensation seeming to be simultaneously abolished. In this state the animal either dies or falls into a series of tetanic convulsions, in one of which death occurs.

When the bromide of ammonium is given to pigeons in toxic doses, its first effect is sedative, the animal standing quietly and appearing inclined to sleep. In a variable time a condition of excitement succeeds: the bird is driven forward violently on the breast in strong convulsions, with forced, hurried, and gasping respiration. A series of spasms, with opisthotonos, follows, in one of which the animal, with wings and tail extended, dies.

In rabbits the first effect is quieting, followed by a state of muscular relaxation, the animal falling over on the side. In a short time a series of clonic convulsions occur, the respirations, which before were quick and hurried, becoming slower, weaker, and gasping. In this state death ensues.

Death, in both cold-blooded and warm-blooded animals, is caused undoubtedly by asphyxia. In the frog the heart is found beating for some time after respirations and voluntary movements have ceased. In pigeons the heart was observed to beat from two to three minutes after respirations had ceased.

Condition of the heart after death.—In frogs, in two experiments, the heart was dilated; in one experiment it was contracted. In four experiments on pigeons the heart was contracted, and in two experiments it was dilated, after death.

Convulsions.—In frogs, convulsions from poisoning by bromide of ammonium occurred in twelve out of twenty-nine experiments. In ten experiments on sound frogs, that is, those on whom no operation was performed, spasms occurred in seven cases. Convulsions happened in each of the eight experiments on pigeons.

That the convulsions from poisoning by bromide of ammonium are not muscular or due to irritation of the peripheral afferent or efferent nerves was proved by protecting one or both posterior extremities of frogs by ligating either the crural artery or abdominal aorta. It was then found that the convulsions occurred as well in the non-poisoned as in the poisoned extremities. That they are not cerebral was proved in pigeons in which the spinal cord was cut before the exhibition of the medicine.

The convulsions produced in poisoning by bromide of ammonium are therefore spinal.

Paralysis.—That the poisoning by bromide of ammonium is not muscular or due to paralysis of the efferent nerves was proved by experiments, in which it is found that in frogs paralyzed by the drug the application of the galvanic current to the nerves or to the muscles themselves causes free muscular contractions.

It was also found that when one posterior extremity was protected from the action of the poison by tying the crural artery, there was no perceptible difference in the poisoned and the non-poisoned leg when their sciatic nerves were galvanized.

Having proved, then, that the paralysis in poisoning by bromide of ammonium is not muscular or due to paralysis of the motor nerves, it must be either cerebral or spinal. That it is not cerebral was proved by the fact that reflex actions after division of the spinal cord are abolished as quickly as in the sound animal.

The paralysis, therefore, in poisoning by bromide of ammonium is spinal, as was further shown in four experiments, in which the spinal cord was cut below the nerves supplying the anterior extremities, and all the blood-vessels supplying the divided part were severed.

That the paralysis is spinal is further proved by the fact that it occurred equally in the hind legs when the medicine was allowed full access to them as when the crural artery or abdominal aorta was tied.

The paralysis in poisoning by bromide of ammonium is therefore spinal.

Apparently, as was noticed in several experiments, paralysis of the peripheral ends of the afferent or sensory nerves occurs simultaneously with the spinal paralysis.

* This thesis is based upon thirty-three experiments reported in full in the original inaugural thesis.

The following conclusions are therefore deduced from the experiments:

1. The convulsions produced by poisonous doses of bromide of ammonium are spinal.

2. Bromide of ammonium produces paralysis of the receptive tract of the spinal cord, that is, of the part which receives and transmits impressions, and of the peripheral ends of the afferent or sensory nerves.

3. Death is produced by asphyxia.

4. The action of bromide of ammonium on the nervous system is, therefore, identical with that of the bromide of potassium.

RESTORING BACKWARD DISPLACEMENTS OF THE UTERUS FROM THE RECTUM.

BY H. W. STREETER, M.D.,

Watertown, N.Y.,

Surgeon to the Jefferson County Almshouse, Insane Asylum, and Jail.

FOR several years I was in the habit of reducing retro-displacements of the uterus by means of the orthodox apparatus, either extemporized or ready-made, as recommended in the books, namely, to push up the fundus by a probe or elevator of some kind. I say retro-*displacements* because I am thoroughly convinced that too much attention has been paid to the theoretical distinction between flexion and version. It is all well enough as an interesting question of diagnosis, but when you come to the most successful treatment it will generally be found to be a question of very little moment whether the uterus is bent or tipped; and most cases are both bent and tipped. Of course there are exceptions to this observation, but from a large experience I know this to be true of the great majority of cases. After following the usual routine, with the usual amount of success, I came across a case which resisted all reasonable uplifting pressure per vaginam. The patient was in exquisite agony, and something had to be done, and done at once. The case was acute in its immediate cause, being produced by a strain, but several years previously had been preceded by a fall, since which time there had been more or less uterine disturbance, pointing to a displacement. First, the bowel was thoroughly cleaned out by copious injections, and the former efforts per vaginam were renewed in vain. A colpeurynter in the collapsed state was then inserted into the rectum and pushed up just beneath the fundus uteri. It was inflated rapidly and largely with water, probably to the extent of four or five syringefuls, and held there for five minutes. The woman was placed upon her abdomen and kept so for several days. The symptoms immediately disappeared, and examination showed that the uterus had been restored to its normal position.

I call particular attention to the great advantage of rectal over vaginal elevation, because of the greater leverage from the sphincter ani than from the sphincter vaginæ. The former sphincter is much more firm, as every one knows, than the latter. I have repeated this operation in a great many cases since this first one with the most gratifying results. The after-treatment has been by pessary, and especially by keeping the bowel empty and the motions soft.

SUCCESSFUL OPERATION FOR EPITHELIAL CANCER OF THE RECTUM.

BY F. P. HOUSEKEEPER, M.D.

DURING the month of September, 1877, Miss M. came under my care, suffering from a pain in the rectum of four months' duration, which she attributed to hemorrhoids. As an examination was not permissible, her statement was relied on, and appropriate medicines given to allay the trouble. In the course of two weeks she again visited me, and reported herself no better, and the pain, which had been paroxysmal, *i.e.*, at the time of defecation, was continuous and almost unendurable. On examining the rectum there was an ulcerated space, with everted and indurated edges, extending from the external sphincter inwards about one and one-half inches, occupying the lateral portion of the bowel on the left side, discharging a creamy muco-pus. There was not any induration of the surrounding tissues; the cancerous mass occupying a space about one inch in diameter. The general appearance of the parts to me was that of epithelioma. Had always been healthy, except a previous attack of inflammatory rheumatism, which did not affect the heart. Her weight was one hundred and sixty pounds, no cancerous cachexia, and her general condition only failed as a resultant of the continual pain she was subjected to. My diagnosis was that of epithelial cancer, which was afterwards confirmed by Dr. Agnew, who was called to operate, November 10, 1877. The

patient was placed in the ordinary lithotomy position, and an operation similar to Lisfranc's performed. It was performed very carefully, requiring one hour and twenty-eight minutes; about one-half ounce of blood was lost.

There were almost two inches of the rectum excised, which upon microscopical examination did not show any infiltration of the cut edges. She was placed in bed, an anodyne administered, and rested perfectly during the night. I may state here that this was the only anodyne she received during her illness, as she did not suffer any pain from the day of the operation to her complete recovery. The highest point the temperature reached (taken daily) was 101°, pulse 120, two days after the operation, and was attributed more to a slight attack of rheumatism. The bowels were confined for nine days, and afterwards moved by a gentle cathartic, producing a smarting sensation at the anus, the cause of which was very apparent. She now has perfect control over the bowels even in diarrhœa. The parts healed rapidly with a dressing of pulv. iodoform. and carbolized oil. Rising from her bed seventeen days after the operation, she is now enjoying perfect health and attending to her household duties.

STRYCHNOS PSEUDOQUINIA.

IN the Brazilian exhibit at the Centennial Exhibition of 1876 were some roots stated by Prof. Saldanha to be those of strychnos pseudoquinia. Thinking that they might possibly contain an alkaloid, samples of the specimens presented by Prof. Saldanha to the Medical Department of the University were placed in the hands of Mr. James H. Wroth, assistant in the chemical laboratory, for examination. He makes the following report: the experiments as detailed were repeated upon both bark and wood. The negative results confirm those of Vauquelin and Mercadieu (Pereira's Materia Medica), and it may be considered determined that the drug contains no alkaloid.

Exp. I.—About 2 grm. of substance digested with SO_4H_2 for two hours, filtered. Excess of caustic potash added. Treated with *ether*. No result from evaporation or physiologically.

Exp. II.—Same treatment as above, chloroform substituted for ether. No result.

Exp. III.—5 grm. (about) treated with dilute SO_4H. Filtered, evaporated nearly to dryness. Alcohol added and boiled. Filtered. No physiological action.

Exp. IV.—5 grm. (about) treated with distilled water, and digested for four days at low temperature. Filtered. No result from ether or chloroform.

Exp. V.—5 grm. digested for a day with acetic acid. Filtered, concentrated over water-bath. No result with ether or chloroform, or physiologically.

Exp. VI.—5 grm. digested for three days at temperature about 120° F., with acetic acid. Filtered. No result with ether or chloroform.

In the above, ether and chloroform were used, giving negative results.

After making the above investigations, special tests were made for strychnia and quinia, with also negative results.

All the solutions contained a large proportion of tannic acid. H. C. W.

TRANSLATIONS.

ABSOLUTE REST IN THE TREATMENT OF TETANUS.—According to *Centralblatt für Chirurgie*, No. 41, 1877, p. 648, De Renzi recommends absolute rest in the treatment of tetanus, and bases his conclusions on the following experiments. He administered strychnia to frogs, and thus obtained a tetanic condition. It was found that the tetanic symptoms were more severe in frogs that lived in the light than in those kept in a dark place; and the spasms were developed more strongly and more quickly in animals kept in motion than in those remaining at rest. Doses of strychnia which killed them if the frogs were shaken failed to prove fatal when they were left absolutely at rest.

He, moreover, treated four tetanic patients by placing them in a carpeted and completely dark room, and by stopping their ears with wax to exclude noises, in order that the persons should have perfect quiet. Three of his cases, suffering respectively from traumatic tetanus, idiopathic tetanus, and strychnia-poisoning, recovered, while only one succumbed to the disease. J. B. R.

MORTIFICATION OF STUMPS FOLLOWING THE APPLICATION OF ESMARCH'S BANDAGE IN AMPUTATIONS.—We find in *Centralblatt für Chirurgie*, No. 41, 1877, p. 654, a case of this kind quoted from a Polish journal, where the patient, a girl of 11 years, was subjected to amputation at the lower third of the thigh thirty-six hours after having the leg crushed in a threshing-machine. Esmarch's elastic bandage was employed to arrest the circulation, but the following day mortification of the soft parts on the posterior and outer side of the stump occurred, and extended to the point of

constriction. A cure, however, took place finally. A sufficient number of such cases have now been recorded to make the surgeon see that the elastic bandage is not without danger, especially if it be applied in an improper manner. Four or five cases somewhat similar to this one of Szeparowicz's are reported in the *Archives of Clinical Surgery*, New York, August, 1877, and should serve to direct attention to the subject. J. B. R.

Extensive Sloughing of the Stomach and Diaphragm probably due to Swallowing of some Caustic Substance.—M. Dujardin-Beaumetz has reported an interesting case, of which, however, the history is very imperfect (see *La France Médicale*, 1877, No. 91, p. 724). The patient had been seized with hæmatemesis during defecation, and had eagerly drunk large amounts of water. When admitted to the hospital, there was found ulcerative stomatitis involving the lower lip, veil of the palate, and epiglottis. The patient ate, did not vomit, and did not complain of pain. At the end of eight days, or fourteen days after the accident, death occurred with vomiting of blood. The autopsy showed sloughing of the stomach and diaphragm to such an extent that the posterior wall of the stomach was almost completely destroyed, and the thorax and abdomen communicated so freely that the liver, spleen, and omentum were found in the thorax. The œsophagus was not examined, because the body was removed by the friends. It was considered that the man had taken some caustic with suicidal intent, but information could not be obtained of a satisfactory kind regarding the previous history. The specimens were interesting in a pathological and clinical point of view. J. B. R.

Intestinal Occlusion caused by Luxation of the Spleen.—Dr. Barbesin, of Pesth (*La France Méd.*, 1877, p. 748; from *Allg. Wien. Med. Zeitung*), publishes the case of a woman who entered the hospital giving all the symptoms of intestinal occlusion. Three days later she died. At the autopsy the spleen, which was normal in volume, occupied the left inguinal region, parallel with Poupart's ligament. Bands of connective tissue bound it to this ligament, to the rectum, to the vertebral column, to the small intestine, to the great omentum, to the sigmoid flexure, to the edge of the pubis, to the uterus, to the Fallopian tube, and to the two ovaries. Its lower surface limited with the cavity of Douglas a space filled with sanious fluid, and the walls of which were sphacelated and covered with thin, brownish, false membranes. The gastro-splenic omentum, converted into a cord the size of the little finger, and seven centimetres in length, included the obliterated splenic vessels. The spleen itself was sphacelated. A loop of small intestine was found compressed between this ligamentous cord and the vertebral column. x.

Lesions of the Anterior Roots in Diphtheritic Paralysis.—Dejerine examined post mortem three cases of diphtheritic spinal disease in children, in one of whom during life paralysis of almost all the muscles of the body had been observed in addition to the paralysis of the velum palati. In the other two cases a similar condition existed in the muscles of the upper extremities and neck. The anterior roots of the spinal nerves were placed in a one per cent. solution of hyperosmic acid for twenty-four hours and then examined. In the first and most severe case D. found in most of the nerve-fibres the signs of a far-advanced parenchymatous neuritis (degeneration). The axis cylinders were gone, the medulla fissured or infiltrated with drops of myeline; the nuclei of the nerve-sheaths as well as those of the intertubular connective tissue were multiplied. Similar changes were observed in some peripheral nerves taken from the muscles; the muscular fibres themselves seemed entirely intact. Similar though less marked were the changes observed in the other two cases, in which the paralytic symptoms had been less extensive and of shorter duration than in the first case. The changes in the nerves resembled those which appear when the nerves for any reason are deprived for a long period of the influence of their trophic centres, and it seems probable, according to Dejerine, that the changes in the peripheral nerves are dependent upon a (cellular) intramedullary lesion. He promises the results of the examination of the cord at a future time.—*Gaz. Méd.*, 1877, No. 33. x.

Absorption of Tincture of Iodine by the Skin.—Dr. L. Menager (*Bull. Gén. de Thérap.*, 1878, p. 139) has experimented upon children with a solution of equal parts of tincture of iodine and glyce-

rin, rubbed into the skin, and has arrived at the following conclusions. 1. Iodine in tincture mixed with glycerin and applied to the external integument is absorbed. 2. This absorbed iodine is invariably found in the secretions and in the urine. (Dr. M. tests for iodine by adding a little starch to the urine in a test-tube and then dropping a few drops of nitroso-nitric acid into it. This gives a blue or violet color according to the quantity of starch present.) 3. This application may give rise to certain symptoms, usually a variety of mild temporary albuminuria. 4. Dressings containing tincture of iodine may be employed as a means of introducing this medicine into the system when it cannot be taken by the stomach. 5. It must not be forgotten that when this absorption takes place in patients subject to nervoso-vascular erethism, as in certain cases of phthisis, where these dressings are often practised, they may do more harm than good.

Bandages and dressings containing iodine constitute the best means of exciting cutaneous irritation in cases where the capillaries of the lungs are easily roused to excitation. They should therefore be considered as one of the means to be used in acute phthisis, or in those forms of the disease where it is accompanied by frequent attacks of congestion. x.

Treatment of Ganglion.—Bidder, of Mannheim (*Cbl. f. Chir.*, 1877, No. 52), recommends the injection of carbolic acid as a safe and successful method of treating these annoying growths. The proper procedure is as follows. An ordinary hypodermic syringe, having a sharp needle with a cutting edge near the point, is filled with a two or three per cent. solution of carbolic acid. A fold of the skin being pinched up, the needle of the syringe is thrust under it until the point reaches the capsule of the ganglion. A little slit is made through this with the sharp-edged point of the needle, and then, the latter being slightly withdrawn, the contents of the ganglion are expressed into the surrounding tissues. The point of the needle is then once more inserted into the now emptied ganglion and a few drops of the carbolic-acid solution are injected. A simple water-dressing is afterwards applied. Bidder has been very successful in the treatment of ganglion by this method. x.

Cleansing the Bladder without the Use of the Catheter.—Dr. Berthole (*Cbl. f. Chir.*, No. 52, 1877; fr. *Gaz. Hebdom.*) suggests a method of injecting fluids into the bladder without the use of the catheter, a plan which, although not new, has not received the attention which perhaps it deserves.

It is known that if a stream of water or other fluid is introduced into the urethra it will, if entering under sufficient pressure, gradually dilate the sphincter vesicæ, and it may be caused to enter the bladder when through inflammation or otherwise the urethra is so sensitive as to prevent the passage of a metal or gum catheter.

In using the injection by Berthole's method the patient sits on the floor with his back against the wall, thighs and knees turned out, and the toes turned in. A vessel is placed conveniently to catch any water which may escape. An irrigator with a long tube, with a stop-cock somewhere in its course, is placed upon a bench near by. The tube of the irrigator terminates in a canula of hard rubber twelve to fourteen centimetres long and six millimetres in diameter, which is well oiled and inserted into the urethra, and the patient keeping this in place with the left hand can easily regulate the flow of the fluid with his right hand upon the stop-cock. When the latter is opened, the water usually penetrates into the bladder without the patient's being conscious of its entrance. So soon as he feels the desire to urinate, the stop-cock is to be turned off, as the bladder is then full. The patient can now empty the bladder at once or can retain the fluid some little time. The water should be warmed to the temperature of the body, and the best time for employing the injection is just before going to bed. A single injection, in cystitis, will thin the stagnant urine and deprive it of its irritating quality.

The indications for the direct injection of water (or medicated fluids) are as follows. 1. Diseases of the bladder, and particularly chronic essential or consecutive cystitis. In the former, B. considers this method specific; in consecutive cystitis it is only palliative, of course, since the cause (stone, etc.) must be removed. 2. Contraction of the neck of the bladder. 3. Diseases of the prostate, the injection here being directed against the consecutive vesical catarrh. 4. Diseases of the

urethra,—in particular, urethritis of the deeper portion, where contraction of the membranous portion and of the sphincter vesicæ, with consecutive catarrh, is present. Contra-indications: 1. Paralysis of the bladder. 2. Hypertrophy or other diseased condition of the prostate interfering with urination. 3. Stricture. x.

LYMPHADENOMA OF THE FACE—RETINAL HEMORRHAGES—LEUKÆMIA.—J. Chauvel (*Cbl. f. Chir.*, No. 3, 1878; from *Gaz. Hebdom.*) reports a characteristic case of the affection described recently under the name of lymphadenoma or mycosis fungoides. A custom-house officer, 41 years of age, entered the hospital on account of a tumor on the left side of the face. He had always been healthy: no history of inherited or acquired syphilis or other disease. Four months previously, a small painless tumor had appeared spontaneously on the left upper eyelid. It grew very rapidly and began to pain. On entering the hospital the patient presented decided infiltration of the lymphatic glands of both sides of the neck, particularly the carotid glands along the sterno-mastoid. On the apex of the tumor, somewhat above the left eyebrow, was a reddish sensitive spot. The mucous membrane of the left cheek presented some grayish ulcers. A few days later, diffuse swelling of the face, particularly in the left supra-orbital region, was observed, extending somewhat over the median line towards the right. The cheek was double its normal thickness; the swelling faded insensibly into the surrounding tissues. There were severe neuralgic pains in the left side of the head; earthy coloration of the skin; great weakness. Under the mucous membrane of the cheek, hard nodules could be observed, with greenish-gray patches about the upper molars; some days later the right cheek became swollen, but its mucous membrane remained unchanged. The mouth gave a fetid odor. The patient was sleepless, but, in spite of extreme weakness, showed no disturbance of circulation, respiration, or digestion. Some days later the patient complained of a black spot before the right eye (the left eye was closed by the tumor), and on ophthalmoscopic examination several hemorrhagic spots could be observed on the retina. The diagnosis leukæmic retinitis was made. Excepting the glands of the neck, no other lymphatic glandular enlargements were noted. The spleen was only slightly enlarged. The blood was not examined. The patient died at the end of four weeks. The post-mortem examination showed no emaciation. The tumor was situated chiefly in the skin and subcutaneous cellular tissue. Section showed all the soft tissues, down to the healthy periosteum, changed to a mottled structure. The lymphatic glands presented the same appearance, shown by the microscope to be that of a characteristic lymphatic tumor. The spleen was somewhat enlarged; the liver very large and pale, its intralobular capillaries showing a large proportion of white corpuscles; much albumen with fibrinous casts in the urine. Chauvel gives a second somewhat similar case, which, however, hardly seems of the same character as the one above noted. x.

THE GENITO-CRURAL FOLD AS A BREEDING-PLACE FOR OXYURIS.—Michelson (*Cbl. f. Med.*, p. 25, 1878; from *Berl. Klin. Wochens.*) gives the case of a boy of 13 apparently suffering from intertrigo. Microscopic examination of the epidermis showed the presence of oxyuris ova in considerable quantity. The history accounted for the presence of these in that the boy, who suffered from seat-worms, was accustomed to rub the anus with the front of his shirt-tail, drawing the latter back and forth between the nates and thighs, thus conveying the ova from one locality to the other. The origin of the eczema was probably due in part to the itching caused by creeping about of the worms and in part to the penetration of ova between the layers of the epidermis. Michelson used this opportunity to ascertain if the view that the oxyuris requires only warmth and moisture to develop is correct, or whether the intestinal juices are also needful. Covering the affected parts with moist wrappings, it was found that while the eczema spread rapidly, the oxyuris ova did not hatch, indicating the necessity for something more than mere warmth and moisture. The eczema was easily healed with a mixture of five parts of powdered starch and one part of salicylic acid. x.

ONE drop of the oil of eucalyptus, applied on cotton-wool to the sensitive dentine, is alleged to be an excellent local anæsthetic: if so, it should be a valuable remedy for toothache.

PHILADELPHIA
MEDICAL TIMES.

PHILADELPHIA, MARCH 30, 1878.

EDITORIAL.

PROGRESS AT THE UNIVERSITY.

OUR readers will remember a discussion which some time since occupied considerable space in the columns of this and other journals concerning the position of dentistry. The upshot of it was to show that there are two distinct ways of looking at dentistry,—the narrower viewing it as an artistic profession of itself; the wider seeing in it a specialty of medicine, combining science and art into a symmetrical whole. It was also clearly shown that if dentistry be a specialty of medicine the degree of D.D.S. is an anachronism, and has no more grounds of existence than the degree of D.O.S., Doctor of Ophthalmic Surgery, D.D.S., Doctor of Dermatological Surgery, etc., etc.

Strictly speaking, therefore, any school which would take the higher view of dentistry should abolish the degree of D.D.S.

Facts and customs are, however, frequently at variance with logic, and the statesman, either upon the wide stage of state government or the narrow one of directing an institution, must often sacrifice strict consistency to practical utility, doing not what is absolutely the best, but that which is best under existing circumstances.

We suppose that in their recent action in making a Dental Department the trustees of the University have been governed by such principles as these. They have clearly acknowledged the propriety of dentistry being considered a medical specialty, and have as clearly foreseen and provided for the wants of those persons who, either by adverse circumstances or their own intuitions, are led to adopt the narrower view of the profession. The first impulse of the University authorities was to give no degree of D.D.S., and to teach dentistry only as a specialty of medicine. We think, however, that their final decision is the wisest. According to it, by substituting for such studies as gynæcology and medical chemistry, dental surgery, mechanical dentistry, dental metallurgy, and the like, the student can, in three years, take both the degrees M.D. and D.D.S., and fit himself to practise oral surgery. On the other hand, if he has but two winters at his disposal, he will receive an education much wider and more complete than is given in any of our dental colleges, and may rest upon his D.D.S. as sufficient for the practical purposes of life.

In order to show how much more extensive and thorough the proposed dental course is than that given in any of the dental colleges proper, it is only necessary to state that the winter session lasts during five months instead of four, that the number of professors is six instead of four, and that a special part of the course will be thorough practical training in a chemical laboratory.

As is well known, a few years since, the handsome structure now occupied by the Medical Department of the University was erected, at a cost of $240,000. The great success of the new scheme of medical instruction and the prospective needs of the new Dental Department have, however, rendered even this building entirely insufficient, and the Board of Trustees have decided to put up a separate laboratory building. This will be situated south of the present medical hall, at a distance of some fifty feet, and connected with it by covered archways. It is to be built in harmony with the other University buildings, and is to be four stories high and one hundred and forty feet long by forty wide. The lower floor is to be devoted to a dental clinic room, the dental laboratories and lecture-rooms being in the

present medical hall, and is to be unconnected with the remainder of the building; in its long sweep and abundant light, it is, we believe, unequalled on the continent. It is to be entered from Spruce Street, and fitted up in the best style. The medical part of the building is entered from the rear. The second and third floors are devoted to the teaching of chemistry. Each of them will be furnished with working tables for two hundred men, balance-rooms, flue-closets, etc., etc. Under this arrangement medical students of the first and second years and dental students of the first year will be provided each with his own table and apparatus and will have every facility for becoming a practical chemist.

The fourth floor of the laboratory building is to be divided into five rooms. Two of these, each seventy by twenty feet, furnished with abundance of windows and with skylights, are to be devoted respectively to histological and pathological laboratories. They will each accommodate sixty men, and will be thoroughly equipped. The remaining rooms are to be devoted to physiology. They will contain about 2800 square feet of surface, will be abundantly lighted from all sides, and will furnish sufficient space for a long time to come. It is, however, in contemplation in the not very distant future to erect a distinct building upon the University grounds exclusively for a first-class physiological laboratory.

Surely the new movement at the University has been a success, and gathers momentum as it goes.

A TELEGRAM from Mysore states that the census shows that 25 per cent., or a million and a quarter, died during the famine, and that 35 per cent. of the poor classes have disappeared.

MAXIMS OF SUCCESS.—1. Never look surprised at anything. 2. Before stating your opinion of a case, on your second visit ascertain whether your previous directions have been complied with. 3. Never ask the same question twice.—*Dr. James Syme.*

PROCEEDINGS OF SOCIETIES.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

THURSDAY EVENING, JANUARY 10, 1878.

THE PRESIDENT, Dr. H. LENOX HODGE, in the chair.

Laceration and inflammatory changes in the spinal cord resulting from fracture of the cervical vertebræ. Presented by Dr. J. SOLIS COHEN.

THE case from which the specimen was obtained was under the care of my colleague, Dr. Marcus Franklin, in the surgical wards of the German Hospital.

H. P., age 24 years, was admitted to the German Hospital, August 22, on account of an injury received in falling backwards from a window fourteen feet from the ground, and striking the back of his neck upon some loose bricks. On admission there was complete sensory and motor paralysis extending from the sixth cervical vertebra downwards. The muscles responded to the induced current. The fæces were passed involuntarily, but there was retention of urine, and he was unconcious of the introduction of the catheter. The respiration was entirely diaphragmatic. His appetite was good, and he expressed himself as feeling first-rate. In a few days excessive tympanitis supervened, with constipation, which was only partly relieved by active cathartics and enemata. Wet cups, followed by ice, were applied to the spine.

The temperature in the mouth gradually rose to 103°, but the extremities were cold. On the third day he complained of something in his throat (a sensation apparently due to paralysis of the pharynx), and he had some difficulty in deglutition. Articulation was somewhat impaired. In other respects he felt pretty well, talked cheerfully, and had no idea of his critical condition. On the fifth day a partial and very incomplete sensation returned to the upper extremities, but the paralysis of motion continued complete. Some delirium was now observed, which was followed by epileptiform convulsive movements, which were not well marked on account of the paralysis. These symptoms increased till the time of death, which occurred on the tenth day after admission.

The immediate cause of death appeared to be due to the interference with the respiration owing to the paralysis of the scaleni and intercostals, and no doubt increased by the pressure of flatus on the diaphragm. At the post-mortem the fourth and fifth cervical vertebræ were found to be fractured through the laminæ, and the spinous processes to be driven in upon the cord, which was quite disorganized at this point. The softening extended up a short distance. There were also evidences of meningitis.

Examination of spinal cord after immersion in alcohol during four months. By Dr. Morris Longstreth.

At the seat of injury, the dura mater, for the length of a finger's breadth, hangs like a loose sac; for the length of three-fourths inch above and below, the spinal cord is enlarged, and the dura over it is expanded and pretty tensely stretched. On laying open the dura mater, it is found thickened, especially on its posterior aspect, some distance above and below the seat of injury, especially in the latter direction. The arachnoid membrane is pretty completely adherent to the dura in the length of two and a half inches on the posterior surface, whilst anteriorly the adhesions are less general and not so firm, so that the cavity of the arachnoid was closed at this part; there is no evidence of hemorrhage into it. In the subarachnoid space below the seat of injury are several blood-clots, losing their color and undergoing absorption. At the seat of injury the arachnoid and pia mater are fused together and constitute a thick wall to what is now a cavity in the centre of the spinal cord. On dividing the membranes at this point, all semblance of the cord has disappeared; a little semi-fluid nervous matter is seen partially filling the space; from above and below the much-softened nervous tissue bulges inward, and forms the roof and floor of the cavity of abscess. The softening of the cord extends both above and below the seat of injury for some distance, gradually becoming less until the cord and membranes assume a normal consistence and appearance.

The microscope shows the ordinary appearance seen in nervous tissue resulting from contusion and the subsequent inflammation and softening,—fragments of tubules, numerous small nuclei, granules and oil globules, blood-coloring matter and large granular corpuscles.

Dr. SHAKESPEARE remarked that the specimen showed a complete destruction of the nervous structure of the spinal cord at the place of injury.

He thought the statement that "there was a partial return of sensation" in the upper members misleading. It was based upon no other fact than "the existence of pains," which might have been entirely subjective, since the sensibility of the upper members was not tested by pinching, pricking, or by any other means. The same sort of evidence could be made to prove a return of sensation in an amputated limb when irritation of the nerve-stumps produced a sensation which the patient referred to the ends of his absent fingers.

The so-called "return of sensation" in the case reported can be very readily understood, if one conceives an irritation at the point of injury, either inflammatory or by spiculæ of bone,—the reporter states that these were found in the mass of detritus between the interrupted ends of the cord,—or by any other means whatever, of the central ends of the sensitive fibres from the arms as they pass up the columns of the cord, thus causing a sensation which, although it would have its origin at the point of injury, yet would be referred by the patient to the peripheral termination of those fibres.

Dislocation of cervical vertebræ, with injury of the spinal cord. Presented by Dr. M. LONGSTRETH.

Chas. K., æt. 37, German, admitted to the Pennsylvania Hospital October 18, 1875. Two days previously he had fallen backwards off a fence on which he was sitting, three or four feet to the ground, striking the back about the region of the shoulders. On admission, there was complete paralysis of motion in the legs; right arm could be moved a little, but not the left. Head can be turned only slightly to the right. No sensation below the level of the nipples on the trunk and legs, none on the arms below the deltoid region. Diaphragm moves freely. Retention of urine. No movement of the bowels. Priapism. Perfectly conscious and rational.

In the evening of the 18th, respiration became difficult, 48 per minute; pulse, 116; temperature, 101.5° Fahr.

The difficulty of respiration gradually increased, shortly before death becoming entirely intercostal in its type. Death on the third day.

For the clinical notes of the case, taken from the hospital records, I am indebted to Dr. J. B. Roberts.

The fifth cervical vertebra is separated from the cartilage on its under surface, and slides forward half the width of its body on the sixth vertebra. All the ligaments are torn, excepting a part of anterior common ligament, and those of the transverse processes, while the vertebræ themselves appear uninjured at this point. The spinous processes of the first and second dorsal vertebræ are fractured at a point about half-way in their length.

The spinal cord makes a bend and is compressed at the point of dislocation; the dura mater, as well as the ruptured cartilage and ligaments of the vertebra, is stained red. At the autopsy there was found considerable blood effused into the muscular tissue of the neck localized around the injury. The dura mater is reddened also at the part situated in the body of second dorsal. At both of these points the dura is slightly distended; at the upper point it is somewhat broadened and flattened by pressure, whilst at the lower one it is rounded. On laying open the dura along its posterior surface, no adhesions were found between it and the arachnoid; the arachnoid was normal and transparent, showing no evidence of hemorrhage, and no adhesion to the pia mater.

At the seat of the injuries the pia mater and cord show a darker color, are slightly en-

larged; the cord is very much softened, giving a feeling of fluctuation, but, on incision, it is not found diffluent, although the nervous tissue wells up through the cut surface of the membrane. The softening is more marked at the upper injury.

The length of the cord between these two places is decidedly less firm than normal, but otherwise shows no marked change.

Microscopically, the nervous tissue taken from the softened cord shows abundance of blood-coloring matters, with numerous broken tubules, quantities of granular detritus, and a very few large granular corpuscles.

Old inflammatory changes and anchylosis of cervical and dorsal vertebræ. Presented by Dr. MORRIS LONGSTRETH.

Richard E., æt. 50, colored, admitted to the Pennsylvania Hospital, November 2, 1873, having fallen down-stairs at 3 A.M. of that day. He lay there some hours, unable to move or call for help; was brought to the ward at 6 A.M., unable to articulate, arms and legs paralyzed; the neck was prominent in front, and a depression was felt at about the seventh cervical spine. In the afternoon he could talk without difficulty; there was paralysis of motion and sensation of left hand and forearm, but he had regained the power of motion, and sensation was perfect over the rest of the body. He could place either hand on his head, but moved them hesitatingly. The head moved a little to the left side, but not to the right. Complained of discomfort, but no severe pain. He required the use of the catheter. He was found dead at midnight, having continued in the same condition until that time. There was some evidence which led us to think that a sudden movement of the body caused a dislocation of the fracture. There was no history obtainable of previous disease affecting the neck or throat, and no evidence of syphilitic infection.

The clinical notes of the case were taken by Dr. Woodbury from the hospital records.

The specimen shows disease of all the cervical vertebræ, most markedly on their bodies and articular processes. The atlas is not shown in the preparation, but examination of it at the autopsy found it free from disease. In the removal of the vertebræ from the body, the saw-cut removed the odontoid process, which was also normal. The axis and the third vertebra are fused into one mass, showing their parts, however, distinctly. The anchylosis affects not only the bodies at the intervertebral discs, and the articulation at the transverse processes, but also the back parts of their arches at the base of the spinous processes.

The lower part of the third vertebra has the lower part of its body, which when normal projects downward and forward to meet the fourth, very much spread out, and shelved forward more than a half-inch, and this part is very uneven and jagged with small spiculæ of bone. It would seem as though part of its body had been destroyed by caries. The junction of the third and fourth vertebræ gives the appearance on their anterior surface of a backward dislocation of the former, but the interior of the spinal canal disproves the occurrence of this condition.

The body of the fourth vertebra is increased in size in all directions; its upper border projects upward, and has a ragged edge slightly overlapping the remains of the intervertebral cartilage, as well as the vertebra above it; its central part is more prominent than normal; its lower border (epiphyseal plate) shows a line of separation perforated with large canals. This vertebra was pretty firmly united with the one below it, but there still remained a thin layer of unossified cartilage between them; their line of junction is very irregular and jagged.

The fifth and sixth vertebræ are firmly anchylosed throughout, showing as the only openings between them the two intervertebral foramina, and a small fissure at the base of their spinous processes; their bodies are considerably changed in form, broadened and irregular laterally, with anteriorly a smooth concave surface, perforated by numerous openings, but showing no trace of the normal line of separation; their laminæ are broadened and thickened, and their transverse processes rounded and massive; their upper and lower terminations are very irregular, the lower one especially, which overlaps the seventh vertebra considerably on its right side.

The seventh vertebra has its body distorted, its anterior surface roughened and irregular, the edges projecting and jagged. The intervertebral cartilage between it and the first dorsal is normal, but the first dorsal has suffered to the same degree as the seventh cervical; both of them except in their bodies appear nearly normal.

The examination of the spinal cord was very imperfectly carried out, it being impossible to remove it except in fragments, without destroying the bones as a specimen, owing to the firmer connection of the dura mater in the spinal canal than usual.

The dura mater appeared, as seen through the opening between the separated and the fractured vertebræ, uninjured, but having a red color from blood-staining. The cord was softened, and there was considerable hemorrhage at the seat of injury.

The fracture and the probably subsequent dislocation were at the junction of the sixth and seventh cervical vertebræ.

Remarks.—The condition of the bone was the result of disease which long since had healed, although no history could be obtained indicating the time of its occurrence or its nature: in fact, there was no knowledge of the existence of any such condition until after the autopsy was made. While it is probable

that the patient himself could have furnished the information, had he been in a condition to communicate it, his friends knew nothing of it.

When death results *suddenly* from injury to the cervical portion of the spinal cord, I think it becomes a question whether it is not in such cases due to cardiac paralysis. I have no knowledge, however, of the precise mode of death from such injuries, and it would require a large number of post-mortem examinations to determine this question from the state of contraction of the ventricular cavities, which is so expressive in such points. If the death were due to a cardiac paralysis, coming suddenly and of purely nervous origin, its origin, I think, must be traced to injury of the cord, or the spinal nerve fibres communicating with cervical sympathetic ganglia, or their interganglionic cords from which arise the cardiac nerves passing to the special plexuses, or ganglia of the heart.

Dr. JOHN ASHHURST, JR., said, in regard to the cause of death in cases of dislocation of the vertebræ, that if the lesions were above the fourth cervical vertebra, instant death would result from implication of the phrenic nerve. When lower down, death was ordinarily due to paralysis of the diaphragm, caused not only by extension of spinal softening in an upward direction, but mechanically also by distention of the intestines with gas, from paralysis of the abdominal muscles. In answer to a question as to the frequency of dislocation of the vertebræ without fracture, Dr. A. said that it had been thought to be very rare by the older writers, but that later authors had mentioned it as occurring more frequently than was formerly supposed. He had himself never seen a case that merited the name of pure dislocation, and he believed there was generally some bone lesion present. Some years ago he had proposed the name *diastasis* for these cases, as there was a separation rather than a luxation such as occurs in the joints of the extremities. The lesion was most frequently met with in the cervical region, next in the lumbar, and least often in the dorsal spine, where the ribs act as splints in preventing displacement.

Perforated appendix vermiformis cæci caused by fecal concretion. Presented by Dr. R. G. CURTIN.

Through the kindness of Dr. Wm. C. Crooks, I am able to present this specimen. Mr. M., æt. 36, of sober, steady habits, sedentary life, and a wood-carver by occupation. About eighteen months previous to his last illness, he suffered from what the attending physician pronounced to be *dysentery*, bloody and mucous stools being frequent. Several weeks elapsed before he regained sufficient strength to resume work. After recovering from this attack he made no complaint, and appeared to enjoy good health up to ten months ago, when he experienced a severe cramp-like pain in the lower bowel, which was almost instantly relieved by a dose of castor oil and laudanum, although a tenderness remained for a time over the right iliac region, which, however, attracted no special notice.

On the 24th of last month (December), while at light work, he was similarly affected, and in the evening took a dose of castor oil and laudanum. This not relieving him, he called at my office the next morning. Anticipating an attack of pelvic peritonitis, I advised him to go to bed, and directed warm applications to the abdomen, also administered an anodyne, to quiet and relieve pain. Next day when I visited him I found him suffering with a marked pelvic peritonitis. At the end of the fourth day his condition began to improve. A gentle purgative being administered, in connection with an enema of warm water, a discharge of small hardened fæces, followed by a copious discharge of muco-purulent matter, was effected. Apparent convalescence continued until the evening of the 3d instant, when the pain over the seat of the old soreness, in the right iliac region, accompanied by a small, quick pulse, tympanitic abdomen, cold extremities, and vomiting, became intense. Morphia, chloral, and bromide of potassium in large doses failed to give any relief, and death took place between 3 and 4 A.M.

Autopsy, six hours after death.—On opening the abdominal cavity the omentum and intestines were found matted together with a recently formed lymph (except as noted below). A creamy pus exuded from the interstices of the mass, amounting to perhaps four ounces. The rectum was found to be surrounded by old inflammatory induration. All around the right iliac region the small intestines, and the caput coli, as well as the rectum, showed evidence of old inflammatory trouble, being covered with, and glued together by, old lymph. Over the position of the appendix of the caput coli I separated the small intestines, which were adherent, and as the incarcerated appendix came into view, a small feculent nodule escaped from an ulcerated opening through the wall of the cæcal appendix, about an inch from the distal end. This nodule was one third of an inch in length, and about one eighth of an inch in diameter. It was quite firm at first, and seemed to have a minute white nucleus, but the whole of the pellet softened down when macerated in water. The ulcer freely communicated with the bowel above. Below the ulcer, the vermiform appendix was increased in size and very firm: the cavity of this portion was found to be obliterated. The organ was about two and three-fourths inches, which is rather longer than is usual.

Dr. LONGSTRETH said that disease around the appendix vermiformis was not so uncommon as the books would lead us to think, and

that, from considerable experience on the subject, some involvement of this region in an inflammatory lesion was not very rare, and that, too, without bad results in very many cases. Inflammation can occur at this part, entirely locally limited, and end rapidly by plastic adhesion, as we find, post mortem, is so frequently the case with the pleura; yet in the peritoneum, as in the pleura, there may be no life-history of the occurrence, with the symptoms which are usually considered to indicate an inflammation of a serous membrane. In the one case the attack may be looked on as a colic, in the other it may be thought of as a muscular rheumatic pain. In fact, from the anatomical relation of the two parts to their respective surroundings, it is conceivable that many times local inflammation might occur, and end by plastic adhesion, without involving the peritoneum generally; in the pleura, with its constant rubbing, it is much more difficult of conception how any irritant affecting one part does not rapidly involve the whole in inflammatory changes.

In regard to the question of the occurrence of inflammation remaining undiscovered, nothing is more likely, judged of by post-mortem experience; no disease, such was his observation, came more frequently to autopsy undiagnosed than peritonitis, and that, too, even when the inflammation is general, of some duration, and of a severe character. The class of cases in which he had met peritonitis, not positively known or even suspected during life, include perihepatitis with cirrhosis, tuberculosis, typhoid fever with or without perforation, and injuries or operations in the abdomen. The reverse of this statement is not an infrequent occurrence, that the diagnosis of peritonitis is not confirmed by the autopsy; and this statement does but confirm the general growing opinion that certainty of diagnosis in diseases, especially those leading to inflammation of the peritoneal membrane, is one of the most uncertain problems of the art.

In regard to the question of a necessary connection between the presence of hardened fecal matter in the appendix cæci and inflammation, it was the result of his observation, that fecal matter is pretty constantly present within the tube, but that its consistence and amount vary very greatly. In many cases, examined with care, he had found single small hardened masses; in a few instances there was more than one such mass; in one case, which he particularly calls to mind, the appendix was occupied in its entire length by masses having the date-seed form. In none of these cases was there peritonitis, although in some the mucous membrane was thickened.

Dr. SHAKESPEARE said, in respect to the presence of foreign bodies in the appendix vermiformis, that he had himself seen two or three examples, without any inflammatory action occurring, and, so far as he could remember, it appeared to him not rare to find foreign substances in the appendix, when the post-mortem had been thorough. Dr. S. also thought it possible for foreign bodies to pass into the appendix and again out into the intestines. He believed that it was even exceptional for small smooth bodies to give rise to serious trouble originating in the appendix.

REVIEWS AND BOOK NOTICES.

A NEW SYSTEM OF MEDICINE, ENTITLED RECOGNIZANT MEDICINE OR THE STATE OF THE SICK. By BHOLANOTH BOSE, M.D. Lond., etc.

PRINCIPLES OF RATIONAL THERAPEUTICS, COMMENCED AS AN INQUIRY INTO THE RELATIVE VALUE OF QUININE AND ARSENIC IN AGUE. By BHOLANOTH BOSE, M.D. Lond., M.R.C.S. Eng., Her Majesty's Indian Service. London, J. & A. Churchill; Calcutta, Thacker, Sprule & Co., 1877.

To those who view the present system of medicine as an inchoate mass of empiricism, and who are searching for something new and startling, we recommend the above works. The first in order requires careful study before it can be asserted to be either true or false, the writer being a man of extensive research and erudition. The second, evidently later in composition, since it frequently refers for support to the previous volume, seems to be the production of a mind crude and almost childish. Observing that the writer is an Anglo-Indian, we have chosen to consider the former as the work of the English, the latter of the Hindoo, part of his nature, as the only way of reconciling the two. Certainly a comparison of the introduction to the Rational Therapeutics with many of the chapters in the New System of Medicine is calculated to call forth sheer amazement.

The New System is truly new. To study its leadings we prefer to notice rather the Rational Therapeutics. It is possible that a more severe study and repeated readings might alter our opinion, but it is hard on an uncertainty to undo the work of years and reduce the mind to the utter blank required before the system can be understood.

The medicine of the system is cell medicine. Diseases and states of the system depend on the cell itself. From the cell upward to the completed organism the system is built up. Our remedies are too powerful and fail to reach the cell. The infinitesimal only is suited for the infinitesimal,—not the billionths of ultra-homœopathy, but the millionths of Dr. Bose. All remedies act in two ways (we gather this from exhausting study): in large doses remedies act—as they do act; in minute doses they often (?) act in an entirely different way. How easily is homœopathy

reconciled to us! We are only on different sides of the shield. The minute dose is the cell medicine. All this is illustrated admirably by arsenic, the substitute for the rapidly failing supply of cinchona. But arsenic is only an illustration: every lesson is to be unlearned, all our terms and nomenclatures to be rewritten, and we must become familiar with a world of "cell tones," "bi," "tri," and "pertubulo cell tones," moto and sentio tones, leading us up through animal and vegetative tones to general tone or health. Muscular, nervous, and spiritual sense must be thoroughly understood; discordance, concordance, accordance, must be weighed and mastered: in fact, we are reminded at every page that it is a new system of the most ambitious and pretentious kind.

Why a moderate dose of arsenic, for instance, does not include the smaller doses required for the cells and produce the same valuable effects we fail to see, as we fail in the case of homœopathy to see the same thing. Evidently Dr. Bose considers the system of cells under the influence of a large dose in the condition of a millionaire without any small change. We give him the illustration; also we ask, Do not ten drops include the mysterious one drop, and if ten grains of sulphate of copper be ejected from the stomach, will not a trace be left to be absorbed and reach the cells? So that a large dose may include in its effects those of a small one.

The writer considers that remedies cannot reach the ultimate cells and fibres without fulfilling certain conditions. They must be bland and inoffensive, minutely and largely divided; must not change the blood; should contain, if possible, principles not alien to the blood, and act slowly and continuously. Such are cell tonics, and without fulfilling these conditions the impatient, too energetic dose of arsenic or strychnia may enter the portals indeed, but will fail to reach the penetralia of the system, where the cells sit like Minos and Rhadamanthus and exercise their power of selection on whatever reaches them. Imagine the joy of those cells when Hahnemann and Bose first discovered the way to supply them with so many necessary things! Picture a cell longing with unutterable yearnings for the ten-millionth of a grain of arsenic through weary years of hope deferred.

It may as well be said, after reading in Rational Therapeutics, p. 52, about "dogged ignorance" and "crying down everything new," that, granting that the cells are microscopic and have only microscopic needs, and granting that medicines must be divided to the infinitesimal to reach such cells, still, as the cells are in number infinite, and must require collectively an infinite number of such infinitesimal particles, we have to give them in all a reasonable dose, or the infinitesimal multiplied by the infinite. So that our author and most homœopathists of the straitest sect argue, without knowing it, only for dilution; and dilution is an excellent thing, as will be found on consulting any recent work on therapeutics. Now, while admitting that by his forcible presentation of the subject of dilution Dr. Bose has earned our thanks; granting—because we cannot deny it, for want of Methusaleh's study-hours—that the New System of Medicine contains some great and original ideas, we can but regret that an entirely foreign nomenclature has been chosen in which to express it. Take the following paragraph as showing the perfection of the New System in giving a definite expression of the whole story of disease: "Hydrophobia = general existent (convulsions) and partial coexistent (lockjaw) and concordant spasms (tonic spasms) of voluntary muscles + excessive spinal motor accordance plus perverted mental accordance (fear of water) + canine poisoning," and say, average student and rational man, if the first effect of reading the above be not a suggestion of the wards of your neighboring lunatic asylum.

We do not, however, condemn these books, lest they prove, unpromising as they seem, to contain a germ of true thought which may lead some day to the sorely-needed new system of rational medicine; but we fear we shall not as a science mount up all at once through tubulo and pertubulo tones and the vegetative tone to the general tone of perfection.

E. W. W.

THE MEDICAL DIGEST. By RICHARD NEALE, M.D.

LECTURES ON SURGICAL PATHOLOGY AND THERAPEUTICS. By THEODOR BILLROTH. Translated from the Eighth German Edition.

These two very diverse works are the most recent publications of the New Sydenham Society, and have each their especial value. The first of them is really a bibliography or reference-book, and is stated to be the outcome of work during the leisure hours of thirty years. It contains an enormous number of references, but is far from complete.

The second volume is part of a work so well known to the profession, and so closely connected with the world-wide fame of its author, that we can only welcome it in its English dress and express satisfaction that the Sydenham Society has put it within the reach of the numerous practical surgeons in England and this country who are unable to read German.

THE MORTUARY EXPERIENCE OF THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK. By G. S. WINSTON, M.D., W. R. GILLETTE, M.D., and E. J. MARSH, M.D. Vol. ii. New York.

This is a tabulated report, with analyses, of the causes of death occurring in the insured of the company during thirty years. The

book is chiefly of interest as bearing upon questions arising in the business of life insurance. It will be a necessary integer in the library of every physician paying especial attention to such subjects.

ADDRESS BEFORE THE ROCKY MOUNTAIN MEDICAL ASSOCIATION, June 6, 1877. By J. M. TONER, M.D. Washington, D.C.

A curious and interesting address, of permanent value on account of the abundant information contained in it concerning the present and previous aborigines of this country.

REPORTS ON DISEASES OF THE CHEST. Under the direction of HORACE DOBELL, M.D. Vol. iii. London, 1878.

This is a continuation of the well-known and valuable reports of Dr. Dobell, and is even fuller and more thorough than those which have preceded it. It is stated that the reports are no longer to be annual, "but will appear at such times as the accumulation of important materials may render advisable." We sincerely trust that there will be no falling off in interest and no irregularity in publication of these very valuable works. The practitioner can maintain his status much better by buying and conning these reports than by devoting himself to new works on thoracic diseases as they appear.

MANAGEMENT OF THE INSANE IN GREAT BRITAIN. By H. B. WILBUR. Albany, 1877.

DISEASES OF THE MIND. By CHAS. F. FOLSOM, M.D. Boston, 1877.

These two pamphlets, although launched under such different titles, are very parallel in their scope, and are important contributions to the discussion now going on concerning the management of the insane. To discuss them in detail would be to discuss the subjects upon which they treat, which this is hardly the time or place to do. So we leave them with the mere statement of their place in literature.

GLEANINGS FROM EXCHANGES.

BLOOD-POISONING CAUSED BY A PESSARY (*The Clinic*, January 19, 1878).—Dr. Tassius gives an account of a woman who had complained for some weeks of pains in the extremities, loss of appetite, alternating sensation of heat and cold, ill odors and taste, headache, sleeplessness, irregularity of bowels, etc., but no disturbances of the menstrual function. Careful physical examinations revealed nothing, and he continued for over a week to make daily visits; but, not being satisfied as to the nature of the case, he simply temporized by prescribing blindly. One day, however, the bed-clothing being thrown back, he observed an unusually offensive odor which he believed to proceed from fecal matter. The patient said she herself had for some time noticed this, but could not account for it, as she was quite cleanly and was sure it could not proceed from the pessary which she had introduced a year previous for her prolapsus uteri. This complication, to which she seemed to attach no importance, she had not even mentioned heretofore, when questioned concerning uterine difficulties. His suspicions being at once aroused, he removed this pessary, when a most abominable stench followed. The ring, a rubber one, seemed to have been almost eaten away; it was friable, and the force applied in removing it was sufficient to break it into numerous pieces. Antiseptics being now freely used, locally and internally, the woman gradually improved in health, although she never entirely regained her previous strength. She died two years later of pulmonary phthisis, the seeds of which were probably sown by this quasi blood-poisoning.

HYDROPHOBIA (*The Boston Medical and Surgical Journal*, February 21, 1878).—Dr. J. B. Maynard reports the case of a gentleman who had been bitten by a dog some six weeks previously, and who when he came under observation had been troubled for two days with vague symptoms of distress, anorexia, lassitude, and lack of sleep, subsequently accompanied by difficulty of deglutition and slight spasmodic contractions of the throat. Inspection of the fauces revealed neither swelling, redness, nor any morbid condition to explain the dysphagia which he exerted his utmost to overcome. The spasmodic action hourly increased in severity, with some flow of saliva from the mouth. The following morning there was an aggravation of all the symptoms. The saliva became more profuse, more tenacious and adherent to the mouth; the delirium was more pronounced, though readily checked when the patient was suddenly or loudly addressed. On the evening of the fourth day from the first apparent illness the pulse became extremely rapid, and, with the altered tone and hoarseness of voice, indicated the near approach of death, which took place the same night. The combination of all the symptoms was unmistakably pathognomonic of this painful as well as inevitably fatal disease.

WOUNDED INTESTINES — PROTRUSION — REDUCTION—RECOVERY (*The Medical Record*, February 9, 1878).—Dr. M. Storrs reports the case of a man, æt. 30, who received a wound in the abdomen reaching from just below the umbilicus two inches horizontally to the right. About eighteen feet of small intestines had escaped, and there was a transverse wound of the intestine about one inch in length, but no escape of fecal matter. The anterior abdominal walls rested partly upon the spine and the posterior surface of

the abdominal cavity. The patient was etherized, and the wound in the bowel closed by three small interrupted silk sutures. Two strong and long silk ligatures were passed through the abdominal parietes, including the peritoneum, one on each side of the wound. These were given to assistants upon opposite sides, with directions to draw with nearly full strength upwards from the wound, and obliquely to each other. The intestine was then worked in with the fingers, an inch or two at each effort. The external wound was closed with the interrupted metallic suture; cloths wet with spirits and water were applied, and morphine was given. For four days there was some pain and vomiting and tympany. These disappeared, however, and two weeks after the reception of the injury the patient resumed his work in a manufacturing establishment.

Dr. Storrs remarks that the facility of reduction in this case was due to the traction by the ligatures. When this was diminished or stopped, no headway could be made. When vigorously used, the reduction was comparatively easy and rapid, and the bowel was subjected to much less handling. In a word, this procedure accomplished the following desirable ends:

First. It enlarged the opening beyond the natural limits and beyond the limits through which the parts escaped.

Second. Including the peritoneum in the grasp of the ligatures, there was less danger in the taxis of separating it from the abdominal parietes.

Third. Pressure of the abdomen antagonistic to reduction was removed.

Fourth. An empty chamber was afforded, into which the protruded parts were invited to return and to remain when replaced.

SCRIVENER'S CRAMP (*The British Medical Journal*, January 19, 1878).—Dr. Leonardo Bianchi reports five cases of writer's palsy, calls attention to their different clinical characters, and believes that the following assertions may be made without danger of contradiction:

1. The condition or the morbid process in the professional dyscinesiæ, and its seat, differ in different cases.

2. The difference in the disturbing process of the disease, in its seat, and in the mechanism by which the malady is determined, is perfectly in harmony with the difference of the clinical forms.

3. The prognosis may be considered less grave than most pathologists believe.

4. The treatment, electric or internal, in order that it may obtain a greater average of recoveries, must be conformable to the clinical character of the disease, which differs in various cases, and which must indicate when the ascending or the descending current may have a better effect on the spinal cord and on the nerves, when simultaneous faradization of the muscles and of the skin (disturbance of tactile sense) may be applied with success, when galvanization of the brain or of the sympathetic nerves in the neck is useful, and when the hypodermic injection of strychnia, exclusively or associated with an established method of electrization, may be of more utility.

STRICTURES OF THE INTESTINES (*The British Medical Journal*, January 26, 1878).—Dr. Sidney Coupland and Mr. Henry Morris, after carefully examining all the statistics in relation to intestinal obstruction, come to several general conclusions in regard to the usual seat, termination, and treatment of this disease:

In round numbers, nearly three-fourths of the cases of stricture involve the lower end of the intestine, the number met with in the sigmoid flexure and in the rectum being practically equal; whilst of the remaining one-fourth the ascending colon is the rarest and the cæcum the next rarest seat, the remainder being equally shared by the regions of the transverse colon and the descending colon. In all but an insignificant minority of cases the disease is seated below the cæcum; and this broad general conclusion approximates tolerably closely with the statements of the authorities upon this subject.

In general terms, it may be said that the majority of the strictures are malignant, and this notwithstanding the fact that few are associated with secondary infection of remote viscera. This may be explained by reason of the new growths mostly belonging to the class of epitheliomata, which are notoriously the most local of all forms of cancer, and also possibly because they lead to fatal results before the system comes to be infected.

In the course of inquiry they were struck particularly by the fact that in a large number of cases in which the obstruction was complete and where it remained until death, unrelieved by the operation of colotomy, the fatal issue was brought about by the occurrence of perforation of the gut either just above the seat of stricture or at the cæcum; and it is upon the latter complication that they especially insist.

These cases all illustrate forcibly the fact of cæcal ulceration in cases of stricture even so far removed from the cæcum as the lower end of the rectum. The reason why the cæcum suffers in this way is not far to seek. In cases of simple accumulation, it is generally the chief part to be involved; and in cases of accumulation from organic stricture beyond, the same causes operate with increased force. These are, first, the shape of the cæcum, a mere *cul-de-sac*, above and on the inner side of which the ileum opens at a right angle. It thus acts as a kind of reservoir, where, in cases of obstruction in the course of the large bowel beyond, it serves as it were for the meeting of the two currents, that, namely, setting down-

wards from the ileum, and that regurgitated backwards from the seat of obstruction. Its dependent position is a second factor favorable to accumulation within it. More effectual still is its fixity, placed as it is between the abdominal wall in front and the iliacus muscle behind, and only partially invested by peritoneum, except in rare cases. Hence its power of independent movement is very slight; and that will be lost with the increasing distention. Contrast this with the transverse colon, which, being as a rule more free, is enabled, so long as its muscular walls retain their tonicity, to empty itself. Further, to all this must be added the constant chafing of the distended gut by the action of the abdominal and iliacus muscles between which it is placed. The treatment should be based upon a knowledge of these facts.

Obviously, those cases of rectal cancer must be set aside in which the diagnosis by means of physical examination is easy, or in which the nature of the case has been made out long prior to the supervention of total obstruction. Of course, in such cases the only rational procedure is that universally pursued by surgeons, viz., left colotomy; and in all such cases the writers recognize the futility of delay, and the long-lasting relief, for months or even for years, frequently obtained by that operation. But in all other cases, where the history is one of chronic obstruction, where the age of the patient favors the view of cancer, where, in fine, it is probable that a stricture of the bowel exists, then, without wasting time over repeated injections, administering powerful and harmful purgatives, they think that recourse should speedily be had to colotomy in the right loin. They advise this operation, because in a certain proportion of cases (about one-fourth) the stricture is higher than the sigmoid flexure; because in all these cases, whether the obstructing cause be far from or near to the cæcum, there is undue strain thrown upon that portion of the canal; and because the only chance of a favorable issue (in so far as an operation for relief of symptoms can be said to have a favorable result) obviously lies in giving prompt and early relief to the cæcum thus overstrained. It must be borne in mind that cases have occurred in which, the symptoms pointing to the disease in the sigmoid flexure, the descending colon has been opened and found to be empty, owing to the obstruction being situated in the course of the transverse colon or in one of its flexures. Had the operation of right colotomy been performed, not only would it have been above the seat of stricture, but it would also have at once unloaded the distended cæcum. The danger of delaying this operation cannot be too strictly insisted upon. Unfortunately, in the majority of cases the surgeon is not called until the obstruction has been already complete for some time and the cæcum has suffered in proportion.

MORPHIA AND CHLOROFORM NARCOSIS (*New York Medical Journal*, March, 1878).—König recommends strongly this combination. It is especially valuable in drinkers, and those who, for various reasons, are questionable subjects for chloroform, and in operations, too, which do not permit profound narcosis, as those about the face. One or two, or even three, hypodermic injections of one-fifteenth to one-seventh of a grain of sulphate of morphia precede the chloroform, and the patients are rendered insensible to pain, yet not wholly unconscious.

MISCELLANY.

MALIGNANT SCARLATINA TREATED BY SALICYLIC ACID.—A recent number of the *Berliner Klinische Wochenschrift* contains an account of a severe case of malignant scarlatina, in the treatment of which salicylic acid, given internally and injected into the nose, produced the happiest results. The patient was a boy, thirteen years of age, who had been suffering for some weeks from symptoms of gastro-enteritis. On the second day of the scarlatinal eruption, diphtheritic patches appeared on the pharynx and nasal cavities, and on the integument of the nose and lips. These were accompanied by ulceration, and a copious discharge from the nose, with a peculiar fetid odor. The pulse was 150; the temperature 105.8°. A grain of salicylic acid was administered every hour, and a solution, containing one grain to the ounce, was injected into the nasal cavities every two hours. Soup, wine, and eggs were freely given, and the patient's body was ordered to be frequently sponged with cold water. Under this treatment the symptoms gradually subsided. After the first injection the fetid odor began to disappear. Altogether the boy took about ninety grains of the acid. He was convalescent in three weeks. Symptoms of intestinal catarrh, apparently caused by the acid, yielded readily to treatment.

PILOCARPINE AS A MYOTIC.—Dr. Galezowski recently read before the Biological Society of Paris a paper which is worthy of much attention from ophthalmologists. He states that pilocarpine is, as a myotic, equal in power to eserine, but it has the great advantage over the latter in producing less irritation or other mischief in the eye; for he has noticed, after the use of eserine, that the patients have complained of intense ocular pains, followed by conjunctivitis attended with nausea. He employs either the nitrate or the sulphate, in solution. With the nitrate, the strength of the solution is twenty centigrammes to ten grammes of distilled water; with the sulphate, ten centigrammes to six grammes. He prefers cherry-laurel water for the solution, as he has noticed that the pilo-

carpine loses its myotic properties after a time when it is made up with ordinary distilled water; and care must be taken that, whatever salt is employed, it be perfectly neutral.

THE MILK OF AN ESQUIMAUX FEMALE.—They do not always manage things better abroad, for it appears that in Belgium females of the human race are occasionally classed among animals and domiciled in the Garden of the Belgian Zoological Society. However this may be, a young Esquimaux mother, with two infants at the breast, is now being exhibited at the Brussels Garden, and Dr. Coudereau has analyzed her milk, with the object of comparing it to that of a European mother. The results show that Esquimaux milk contains a smaller proportion of salts than the European, but is much richer in saccharine and in fatty materials. This excess of hydro-carbonated elements may be attributed to the ordinary diet of the Esquimaux, who, as is well known, consume large quantities of fat, and are thus enabled to bear the excessive cold of their climate.

SEWAGE STRATA IN RIVERS.—At the last meeting of the Royal Irish Academy Dr. L. Studdert read a paper giving the results of a chemical examination of the mixed waters of the estuary of the river Liffey. It was found that from surface to bottom the sewage matter decreases, while the sea-water increases, in a given measure of the waters. A large proportion of the sewage discharged into the Liffey appears, at flood tide and in dry weather, to be contained in the first inch of surface, which, under the summer sun, would account for the noxious vapors emitted. Much of this superincumbent sewage was found forced up by waves or wind as far as two hundred and fifty yards above any city outfall. The like foul deposit is reported to be thrown up stream from the mouth of the intercepting sewer constructed in the Thames below London.—*Medical Press and Circular.*

BULLET IN THE BRAIN FOR THIRTEEN YEARS.—In the "Transactions of the West Virginia Medical Society" for 1877, Dr. T. B. Camden reports a case in which the subject was shot whilst serving with General Jackson, of the Confederate army, in 1864, in the head. At first senseless, in two months he was able to return to duty, and served during the remainder of the war. In 1868 he had "flighty spells," which disappeared after a severe illness. In 1873 he had an attack of convulsions after working in the sun. In August, 1874, this recurred, and he subsequently became insane. After his death, which took place February, 1877, an abscess of the brain was found leading to an encysted buckshot situated two inches within the brain.

A SUCCESSFUL GASTROSTOMY.—Dr. F. Trendelenburg reports in the *Wiener Med. Presse* another successful case of gastrostomy to be added to the hitherto unique case of Verneuil. A boy aged seven years, the subject of impassable stricture of the œsophagus from swallowing caustic potash, had fallen into extreme marasmus. Gastrostomy was performed without bad effects, and two days afterwards nourishment could be introduced into the stomach through the small resulting gastric fistula. A small drainage-tube of the thickness of the little finger was introduced into the fistula, into which was passed a thicker glass tube having attached to it an elastic gum catheter reaching to the mouth. When the boy wants to eat he chews his food and expels the masticated mass through the tube into the stomach. Four months after the operation his weight had increased by a fourth.

THE twenty universities of Northern Germany cost the country annually about two millions of dollars. The University of Leipsic alone receives two hundred and fifty thousand dollars. These twenty universities have a staff of twelve hundred and fifty professors, who receive salaries varying from five hundred dollars to three thousand dollars. The young man who embraces the career of teaching can calculate on having a salary of two thousand dollars when he reaches the age of thirty-five. He is certain also of a pension when retired. Germany has a university for every two millions of inhabitants, Austria one for five millions, England one for seven millions, and Switzerland one for one million.—*Boston Medical and Surgical Journal.*

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U. S. ARMY FROM MARCH 10 TO MARCH 23, 1878.

SMART, CHARLES, CAPTAIN AND ASSISTANT-SURGEON.—Assigned to temporary duty at Fort Preble, Maine. S. O. 19, Division of the Atlantic, March 11, 1878.

VICKERY, R. S., CAPTAIN AND ASSISTANT-SURGEON.—Granted leave of absence for four months, with permission to go beyond sea. S. O. 58, A. G. O., March 18, 1878.

CARVALLO, C., CAPTAIN AND ASSISTANT-SURGEON.—Leave of absence extended two months. S. O. 51, A. G. O., March 9, 1878.

LORING, L. Y., CAPTAIN AND ASSISTANT-SURGEON.—Relieved from duty in Department of Arizona, and, on expiration of his present leave of absence, ordered before the Army Medical Board, New York City, for examination for promotion, and on its completion report by letter to the Surgeon-General. S. O. 59, A. G. O., March 19, 1878.

PORTER, J. Y., FIRST-LIEUTENANT AND ASSISTANT-SURGEON.—Granted leave of absence for twenty days, and to furnish satisfactory medical attendance during his absence. S. O. 29, Department of the South, March 12, 1878.

BEALL, G. T., CAPTAIN AND MEDICAL STOREKEEPER.—Granted leave of absence for two months on surgeon's certificate of disability. S. O. 51, c. s., A. G. O.

The following-named assistant-surgeons have been ordered to report in person to the President of the Army Medical Board, in session in New York City, for examination for promotion, and upon completion of their examination to return to their proper stations: S. S. JESSOP, PETER MOFFATT, CHARLES STYER, J. K. CORSON, and WM. R. STEINMETZ.